Linum lewisii
Lewis's Blue Flax
by Kathy Lloyd, Montana Native Plant Society

Lewis's blue flax, *Linum lewisii*, was collected on July 9, 1806 in Montana. It is not known for certain who collected the specimen that is housed in the Lewis & Clark Herbarium in Philadelphia. It could have been Meriwether Lewis, who was traveling along the Sun River from Lewis & Clark County into Cascade County, or William Clark, who was at Camp Fortunate in Beaverhead County. Lewis's journal entry for the day says nothing of blue flax, but does talk about the rain and cold, "we then proceeded and it rained without intermission wet us to the skin…the day continuing rainy and cold…" The preserved specimen in the Lewis & Clark Herbarium appears to be in good shape and has a partially opened flower. Blue flax flowers don't remain on the plant for long, and rain is not a good time to collect blue flax. For these and other reasons, some scholars believe that the blue flax specimen was collected by Captain Clark, who was at Camp Fortunate enjoying a relaxing and pleasant day. Either explorer could have collected Lewis's blue flax and we will never know for sure. At any rate, it was named for Meriwether Lewis by Frederick Pursh, who described the plant in his 1814 *Flora Americae Septentrionalis* or Flora of North America. Pursh attached a label to the specimen that reads, "Perennial Flax. Valleys of the Rocky mountains. July 9th 1806." This Lewis and Clark specimen is one of a group that was feared lost but was fortunately relocated in 1896 at the American Philosophical Society and subsequently placed on permanent loan to the Academy of Natural Sciences.

Another sheet of Lewis's blue flax is currently part of the Lewis & Clark Herbarium, but present-day botanists question its authenticity as a Lewis and Clark collection. James Reveal, a preeminent botanist at the University of Maryland, believes the specimen may be a Bradbury or, more likely, a Nuttall collection.

Regardless of how we debate the origin of the various blue flax collections, it is obvious that the plant captured the attention of the expedition in 1805 on the westward trip through Montana, and in 1806 as the explorers again crossed the expanse of Montana on their return journey. Sergeant John Ordway, the only member of the expedition to write in his journal every single day for the entire length of the journey, said on June 16, 1805, "in the bottoms is a great quantity of flax growing all in blue blossoms &C." The expedition was on Portage Creek (now Belt Creek) near the Great Falls of the Missouri. Joseph Whitehouse also mentions flax on June 16, 1805, "in the bottoms is a considerable of wild flax growing all in blossum." Mid-June, near present-day Great Falls, must have been a glorious sight with expanses of blue flax nodding in the breeze. On July 18, 1805, Sergeant Joseph Whitehouse wrote in his journal, "we Came 19 ½ miles and Camped in a narrow bottom on the S. Side. considerable of flax in this bottom half Seded." Captain Lewis wrote on July 31, 1805 near the confluence of Willow Creek and the Jefferson River, "the bull rush & Cat-tail flag grow in great abundance in the moist parts of the bottoms the dryer situations are covered with fine grass, tanzy, thistles, onions and flax." A few miles southwest of present-day Dillon, on August 13, 1805, Joseph Whitehouse penned, "Capt. Clark Shot a duck. considerable of flax in these praries. Some of the men

Save Some of the Seed." Patrick Gass also mentions flax in his journal while in Montana on both the westbound and eastbound journey. It is interesting that Meriwether Lewis was not alone in expressing interest in plants, and various native species are recorded in all the journals kept by expedition members. It is intriguing to speculate where all the blue flax seeds that were collected on August 13, 1805 may have ended up.

Lewis's blue flax, a member of the flax family, or Linaceae, is a perennial wildflower, or forb, that reaches a height of eight to 32 inches. The plant is branched and arises from a woody base and taproot. The stems are slender and seem to always be in motion, even when no breeze is noticeable. The stems are very tough and flexible and can be twisted like string, a good diagnostic characteristic. The leaves are very narrow and are spaced alternately on the stems. The five, clear blue petals form a saucer-shaped flower that is up to an inch across its face. You have to catch them quick though, because the petals only remain on the plant for a day or two. The flowers have five sepals, five stamens and five styles. The oil-rich seeds are found in a ten-celled capsule.

You can find Lewis's blue flax on well drained to dry soils in the grasslands and prairies, in forest openings, and on open, rocky, wooded hillsides, all the way to alpine ridges. It is distributed throughout western North America and the Great Plains from Alaska to California and Mexico and is rare in Ontario, West Virginia and Kansas.

Captain Lewis reported in his journal on July 18, 1805, while in the vicinity of the Dearborn River, "I have observed for several days a species of flax growing in the river bottoms the leaf stem and pericarp of which resembles the common flax cultivated in the U' States. the stem rises to the hight of about 2½ or 3 feet high; as many as 8 or ten of which proceede from the same root. the root appears to be perennial. the bark of the stem is thick strong and appears as if it would make excellent flax. the seed are not yet ripe but I hope to have an opportunity of collecting some of them after they are so if it should on experiment prove to yeald good flax and at the same time admit of being cut without injuring the perennial root it will be a most valuable plant, and I think there is the greatest probability that it will do so, for notwithstanding the seed have not yet arrived at maturity it is putting up suckers or young shoos from the same root and would seem therefore that those which are fully grown and which are in the proper stage of vegitation to produce the best fax are not longer essencial to the preservation or support of the root."

Various native peoples used flax for cordage and string, as well as for mats, snowshoes, fishing nets and baskets. The blue flax plant also had medicinal uses and was employed as a poultice for swellings, as an infusion for eye problems and gastrointestinal distress and as a wash for the body and hair. Sacagawea's Shoshone people used flax in this way. Several native tribes of the upper Missouri River region used flax seed as food because of its nutritive value and flavor.

Flax is one of the most ancient cultivated plants and was used by early Mesopotamians, Greeks and Egyptians to make linen cloth. The fibers are obtained from the stems. Linseed oil, obtained from the seeds, has been used in paints, varnishes and linoleum.

Today, the seeds of a close relative of Lewis's blue flax, *Linum usitatissimum*, are used to make flax oil, rich in omega-3 fatty acids and lignans with a variety of reported health benefits. And Lewis's blue flax, our native Montana species, makes an excellent addition to garden and landscape plantings. It is attractive, drought-tolerant, and very easy to grow. In fact, it self-seeds so readily that you may have to keep it from spreading too far.

This spring and summer visit one of Montana's grassland or prairie habitats and look for Lewis's blue flax and think about the history attached to a pretty, blue flower.